

very challenging. The truck drivers, screed operators, paver operator, and roller operators all play a vital part. Members of the squadron fashioned an asphalt cutting wheel and attached it to the finish roller, which was a quick way to cut longitudinal joints while achieving correct density. To bridge the gap between hard work and experience we arranged for the top three airfield pavement engineers from the Army Corps of Engineers to take us from proficient to perfection.

"At first I was nervous with the inexperience of the crew," said MSgt Darrin Small, "but this is the best (asphalt) mat and paving crew I have ever seen!" The paving team placed almost 22,000 tons in a one-month period alone. Testing revealed the team consistently achieved both surface tolerance and target density exceeding COE airfield standards.

The remainder of the airfield is made up of Portland Cement Concrete. Four different types of some of the worst sealants filled the concrete joints on the airfield. The team fashioned several different types of equipment attachments to remove the different sealants they encountered. They faced equipment shortages, but once outfitted with saws,

joint plows, backer rod and sealant, there was no stopping them.

"It's kind of amazing; it seems like too much work, and then when you finish you realize how fast the time went," said SSgt Ronal Reed Jr. The team was able to remove and replace 22 miles of joint sealant in just 10 weeks.

Rolling, Rolling, Rolling ...

The thrust of the project centered around the 2,000-foot runway and 1,775-foot taxiway full-depth repair sections. We employed GPS in each stage of the excavation, lift thickness and slope of the full-depth repairs. The material was placed with end dump trucks and leveled out with graders to reduce segregation. The GPS-controlled grader then cut the current lift to the correct thickness, and then the rollers went to work. An entire lift, including compaction, would only take two to three days from start to finish.

The use of GPS surveying and construction equipment took two weeks off the full-depth schedule alone. Progress was slowed at times, however, by a lack of quality construction materials. Our base course went through about 11 different iterations in four months before finally getting the product to consistently meet the

gradation requirements. This made meeting our construction schedule and compaction requirements difficult. The full-depth team had to place a six-inch lift to end up with three inches of compacted material after all the oversized segregated material was hauled away.

We developed in-house construction material analysis testing capability specifically for this reason. Our team received training on the multitude of testing equipment and one-on-one on-site interaction with COE experts. This gave our testing lab personnel the training and confidence required for the accuracy of testing necessary. The team completed more than 1,700 tests on soil, concrete and asphalt during the project. By the time the project was completed, the team had developed the first complete mobile material analysis laboratory in the Air Force.

Then There Was Light

The airfield was still not complete until new lights were installed and commissioned. The new lighting system included 706 lights and 48 illuminated guidance signs. The biggest challenge for the team was overcoming lack of experience.

At the Tip of the Spear

RED HORSE performs runway repair under cover of darkness

Lt Col Michael P. Skomrock
200th RHS

Work in the Afghan environment can be challenging but also very rewarding, as members of the 200th/201st RED HORSE Squadron from Camp Perry Air National Guard Station, OH, and Fort Indiantown Gap, PA, found when they deployed there last year for a major undertaking. Their task was to completely rebuild the Air Force Village as well as the runway at Bagram Air Base. By the time the runway project was finished, more than 600 concrete slabs had been replaced, and the Expeditionary RED HORSE team had successfully performed airfield damage repair at night.

Great Expectations

The original runway was constructed by the Soviets as a fighter platform, forming concrete slabs with wood between the slabs. The wood was left after placement to serve as expansion joints. Our original runway tasking was to replace approximately 70 failing 13 by 11-foot concrete slabs. We arrived with a DPRS (deployable pavement repair system) and the expectation of completing the project in approximately 45 days.

While our advon team was at the base, the Air Force Civil Engineer Support Agency's pavement evaluation team arrived



SSgt Scott McHugh, a heavy equipment operator, shovels concrete out of a chute during nighttime taxiway slab repair. (Photo by SSgt Bobby Yettman)

and increased the number of repairs needed to 504 slabs. As we progressed we identified additional slabs, bringing the final number to 628. We quickly geared up and expanded both manpower and schedule.